



MANAGED WIRELESS NETWORK - SERVICE GUIDE 2022

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1 MANAGED SERVICES OVERVIEW

Managed Network and Monitoring Services provides organizations with the management and monitoring of their network infrastructure, to improve availability, whether the infrastructure is on premises, a third-party datacenter or the cloud. This Service Guide describes Managed Network Services in general (part one) and then describes the specific details of the managed network devices for which this service guide is intended (part two). This document clarifies the scope of the service, service level, roles and responsibilities, and other specifications of the service for customers of this service. This document may get updated from time to time to add additional clarification and details related to this service.

1.1 MANAGED SERVICES - GENERAL SERVICE DETAILS

In Scope

- This Managed Service offers management and monitoring of devices and software according to this Service Guide and the InterVision Work Order to aid in resuming normal operations. Additional requests above and beyond will be based upon time and material expense to the Customer.
- Detection, isolation, diagnosis of each fault and restoration to normal operating conditions, testing and documenting each fault within the InterVision trouble ticket system
- Ownership of resolution of the problem on behalf of the Customer and act as an agent for the Customer under executed letters of agency
- Notify the Customer of the progress of all faults per Customer provided contact process.
- Critical software and firmware updates to resolve issues. Premium service level offers periodic updates as detailed later in this service guide.
- Summary reports delivered via our monitoring portal to help the Customer understand traffic, clients, and application usage
- Assistance with warranty replacement and vendor escalations.
- Premium service level assists with changes to individual devices. Mass additions/deletions or changes (greater than 5) are not covered via the Managed Network Services agreement and will be considered project billable tasks.
- Premium Service level offers bi-annual reviews to identify significant business impacting risks. This review includes identification of software updates, end of life, end of support, device performance, and critical configuration errors.
- Safeguard customer's proprietary information using commercially reasonable efforts to securely access client network through an encrypted tunnel.
- ***If, during the life cycle of the contract, a device becomes of "Out of Scope / Unsupported", Operational Support will be reduced to the following:
 - a. Actions related to Device Failures, including those due to failed recovery during the InterVision execution of Client Approved changes, are limited to:
 - i. Device replacement (client provided device or new purchase) with existing configuration included.
 - ii. Additional remediation at T&M.
 - b. The risks of operating Unsupported Software with known vulnerabilities that cannot be addressed due to the lack of vendor support are considered "Accepted" by the client.
 - c. All Operations Center related Incident Remediation efforts are limited to two hours in scope within standard contract language; any additional efforts are subject to T&M.
 - d. Hardware Component failures are the responsibility of the client or must be addressed through T&M / Dispatch.
 - e. Recurring Alerts for Out of Scope / Unsupported devices with no In Scope resolution paths available will be transitioned to Monitor Only.



- f. Actions requiring a change in code version (requested software enhancements / features that require newer version of code / updates to address vulnerabilities) are the responsibility of the client or must be addressed through T&M / Dispatch.

Out of Scope

- Hardware or Software installation or non-RMA replacement is not included with network support unless specifically stated below. Professional services may be engaged to assist with installation, upgrade or replacement.
- Software license and subscriptions are not included. Management devices and software provided as part of the Managed Service will be licensed.
- Netflow reporting is available as an additional optional paid service. The device to be covered by Netflow must support the application and have the necessary capabilities to provide reporting appropriate to need.
- Mass configuration changes to covered devices that are required, due to Customer upstream or downstream projects, are not covered as part of the service.
- Coverage for devices not under agreement are ineligible for support of any type.

Customer Requirements

To allow for successful monitoring and management of devices and execution of SLAs, Customer responsibilities include:

- Providing all network and device information for the InterVision Managed Services team and tools to discover the contracted devices and enable monitoring. This information includes network diagrams, site information, circuit information and Customer Vendors, Letters of Agency, and current software levels.
- Providing computing resources to run InterVision's monitoring and collection tools, and the means for the Collector to contact the InterVision Data Center.
- Performing configuration of devices and network, as necessary, to facilitate monitoring and management of the contracted devices. In the event the customer is unable or does not have the personnel to enable monitoring and management of devices, InterVision's Professional Services can be engaged for assistance at an incremental cost.
- Provide devices access - Remote access to devices must be available for support. The client is responsible for out of band access, along with in-band access.
- Provide a distribution list of Customer contacts to receive alarm triggered notifications and reports
- Supply InterVision team with all the necessary security information including dial-in numbers, access ID's, passwords, SNMP community names necessary for InterVision to perform the Services
- Provide notification contact and escalation lists for use by InterVision during business and non-business hours.
- Provide InterVision team with site contact to facilitate access to equipment and connection terminations, along with out-of-hours access procedures
- Notify InterVision within 72 hours of any changes to the contracted devices via a service/change ticket.
- Execute letters of agency notifying vendors, such as carriers, that InterVision will represent the Customer by isolating and troubleshooting Customer's network problems
- All devices and applications must have vendor support contracts and operate at currently supported vendor versions.
- All devices must be in a supportable state, including current versions of software supported by vendor, with all critical patches applied, in a production capable state with no known failures or functions in order to be covered. Remediation efforts to bring software to current version including patches to make a device production capable will be billable to the customer.

1.2 SERVICE LEVELS

- Monitoring Service provides 24/7 monitoring and customer notification. Notification includes automated alerts as well as notification via service personal to client for critical events. This does not include trouble



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shooting and device support. Support is available for changes to monitoring settings and assistance with reports.

- Essential Service offers 24/7/365 phone and ticket support. It does not include dispatch for onsite support.
- Essential Service with Dispatch offers 24/7/365 phone and ticket support. It includes dispatch for onsite support^{1,2} where remote support is unable to fulfill eligible service events such as RMA device replacement.
- Premium Service offers 24/7/365 phone and ticket support. It includes dispatch for onsite support^{1,2} where remote support is unable to fulfill eligible service events such as RMA device replacement. Premium Service includes addition services including extended coverage for changes, devices software upgrades, periodic health and performance reviews and life-cycle management.

¹ Applies to devices covered under Managed Network Services in the continental US. International onsite coverage may be added via a custom scope of work.

² Onsite support is at the discretion of InterVision as determined necessary

1.3 SUPPORT

Service	Monitor Only	Essential	Essential with Dispatch
Event notification	Included	Included	Included
Phone & Ticket Support 24 hours, 7 days a week	Included for monitoring issues	Included, with SLA	Included, with SLA
Onsite Support **	Not Included	Not Included, No SLA.	Included, with SLA
Phone or Onsite Support – Devices Not Covered by InterVision Managed Services	Not Included	Not Included	Not Included

* All coverage times are based on the local time zone of the supported device.

** Applies to devices covered under Managed Services in the continental US. International onsite coverage may be added via a custom scope of work.

- If an outage or network problem occurs which is determined to be a site related issue InterVision managed service team will document the Incident within its ticketing system. Examples of site related Incidents are: Loss of power to site, damage to premise cabling, accidental disconnection of site cabling or Equipment.
- For Routers, SD-WAN and Firewalls, if an outage or network problem occurs which is determined to be a Broadband Carrier circuit failure, InterVision will, via a Letter of Agency from Customer, contact the relevant Carrier or ISP and report the Incident for resolution. InterVision will then continue to manage the problem and follow up with the Carrier or ISP to ensure service is restored as quickly as possible. This service is included unless specified in the service SKU description as not included.
- If an outage or network problem occurs which is determined to be a failure of CPE, InterVision will diagnose and attempt to resolve the issue remotely. If the outage cannot be resolved remotely, InterVision will escalate to the Customer and/or technician dispatch when needed. Determination of the necessity of on-site services is at the sole discretion of InterVision, If dispatch is requested and cancelled within 48 hours of requested dispatch time, a \$500 cancellation fee will be applied.



1.4 SERVICE ACTIVATION

InterVision employs a structured process to help ensure a smooth transition to Managed Infrastructure and Monitoring services. Our Project Management Office (PMO) owns the process with the Onboarding Engineer (OE), holding the ultimate responsibility and serving as the single point of contact (SPOC).

Steps to activate service

1. Data gathering
 1. Customer service manual
 2. Order form
- Monitoring collector/ Support workstation Deployment and Configuration
- Onboard customer devices
- Add data from step one into systems
- Finalize customer onboarding
- Send any found issues with onboarding for client to review
- Go Live/ Customer training
- Perform true up / Project Closeout

Network Infrastructure Evaluation

For new client environment onboarding not recently set up by InterVision Services, an evaluation is required that will review the environment to ensure it is in a supportable state. Software and Firmware will be reviewed to be current or within one major software version behind current. This evaluation will also review configuration, access control policies for critical risks. Software/Firmware, configuration and access control issues and risks must address to be in a supportable state. Environment updates may be identified as requiring additional project time to address and InterVision reserves the right to modify SLAs or refuse service if Environments are not current and critical risks addressed.

1.5 SERVICE DELIVERY - INCIDENT AND DEVICE IMPACT CLASSIFICATION

The Managed Infrastructure and Monitoring service employs a sophisticated algorithm called the Ticket Enrichment Engine that utilizes the severity of the incident, and the business criticality of the device to determine the appropriate priority levels. Devices such as SD-WAN, routers and firewalls are defaulted to classification as critical devices and are automatically prioritized higher than other devices. Customers can designate other devices as critical, to decrease/increase their prioritization based upon their business impact

Severity 1	No Ticket	
Severity 2	No Ticket	
Severity 3	No Ticket	
Severity 4	Notification Ticket Closed State	
Severity 5	Notification Ticket Closed State	Upgrade Eligible



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Severity 6	P3 Ticket	
Severity 7	P3 Ticket	Upgrade Eligible
Severity 8	P2 Ticket	
Severity 9	P2 Ticket	Upgrade Eligible
Severity 10	P1 Ticket	

Emergency (P1 or P2) services require a phone call to create an incident.

2 SERVICE SPECIFICATIONS - MANAGED WIRELESS LAN

The Wireless Controller service covers the designated Wireless Controller(s) and access points and provides availability and performance monitoring, support and management of the Wireless LAN. It is recommended that this service also be combined with Managed firewall, router and switch services for comprehensive service coverage.

This is a managed service for client-owned equipment, or a combination of cloud based wireless services and client owned access points.

- This managed service is provided based upon each instance of a wireless controller and the number of associated access points.
- As the number of controllers and/or access point increase fees for this management service may increase.

This service is designed to pick up day-to-day monitoring and management of the Wireless LAN after it has been initially installed to vendor support specifications and connections are made and devices are in production. Design and installation service may be obtained via our Professional services. For existing environments an audit to determine manageability may be required.

- Ongoing monitoring, configuration and troubleshooting performed by our knowledgeable network OpsCenter staff
- Software and firmware updates per your request pushed out from a customer's central management console.
- Support Desk with 24/7/365 coverage
- Summary reports delivered via our monitoring portal to help you understand traffic, clients and application usage**
- Assistance with warranty replacement and vendor escalations.
- Monitoring for cloud based controllers may be limited by their capabilities

For a list of currently supported devices, please contact your account representative.

2.1 ROLES AND RESPONSIBILITIES MATRIX

"X" indicates the responsible party. "*" indicated optional services.

Managed Wireless LAN Responsibility Matrix	Customer	InterVision Essential Service	InterVision Premium Service
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General			
Provide Wireless Controller and Access Point information (account, password, location, MAC address,...)	X		
Provide client escalation information	X		
Provide vendor support contracts	X		
Installation and Configuration			
Predictive site survey to develop Access Point placement ¹	X		
Development of new office/site wireless plan ¹	X		
Physical controller install ¹	X		
Physical deployment of new access points ¹	X		
Create new authentication methods - 802.1x, Guest, Mac Authentication ¹	X		
Third Party Integrations ¹	X		
Implementations and major change project management / coordination ¹	X		
Configure new access points directly ¹	X		
Configure new access points via controller (remote) ¹			X
Create new SSID ¹			X
Switch Port Configuration to allow for additional wireless devices ¹			X
Create new vLAN on wireless controller ¹			X
Manage notification profiles		X	X



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One time audit of the Wireless LAN environment for configuration issues, vulnerabilities, and risks.		X	X
Monitoring			
Setup monitoring and logging of wireless network		X	X
Update monitoring thresholds per client requirements		X	X
Setup standard wireless dashboard in InterVision monitoring portal		X	X
Wireless standard reports setup			X
NAC Monitoring and Alerting (Clearpass, Cisco Identity Services Engine,...)			
Incident and Problem Management			
Incident management		X	X
Vendor management (Escalations, RMA,...)		X	X
Troubleshoot down access point		X	X
Troubleshoot FlexConnect™ issues **		X	X
Troubleshoot Authentication issue on wireless devices**		X	X
Troubleshoot configuration issues		X	X
Assist with wireless connection issues (does not cover Operating system support or end user support)		X	X
Vendor management (Escalations, RMA,...)		X	X
Root cause analysis of supported incidents			X
Troubleshooting end-user access issue (help desk)	X		
Troubleshoot signal strength issues or dead zones	X		



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Patch Management			
Software updates (bi-annual)			X
Critical Security patching (as required) ¹			X
Management			
Administer device accounts (role-based access control changes)		X	X
Administer user access to wireless network	X		
Administer guest network captive portal	X		
Network Access Control (NAC) management	X		
Change Management			
Controllers' Software settings		X	X
Log and store changes information via config backup (dependent upon controller tools capability)		X	X
Hardware device physical replacement	X	*	X
Hardware replacement configuration migration to new device (if compatible)		X	X
Create new SSID			X
Configure access policies via controller			X
Configure authentication policies via controller			X
Change controller port configuration			X
Update existing vLAN configuration			X
Optimization of wireless signal coverage ¹	X		



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RF optimization of wireless LAN (WLAN) for offices ¹	X		
NAC changes and change management ¹	X		
Lifecycle and Capacity Planning			
Performance Tuning and Management (bi-annual)			X
Report and notify upon poor signal strength (bi-annual)			X
Capacity Analysis - Bandwidth, utilization (bi-annual)			X
Life Cycle Management Notification (bi-annual)			X
Wireless Access Point coverage recommendations via Cisco Prime Infrastructure Agreement (redeployment is out of scope)			X
AP License Reporting			X
Reporting			
Standard Operations Reports		X	X
Diagnostic reports			X
Custom Operations Reports	X		

* Available with onsite dispatch option for the Essential service level.

** Full troubleshooting may require Managed Infrastructure support of all upstream network components.

¹ This is available from InterVision professional services.

2.2 MONITORING - MANAGED WIRELESS

The following monitoring is implemented as permitted by the Wireless environment.

Incident Name	Trigger	Threshold	Severity
Network Device Not Responding	5 pings every 2 minutes	100% packet loss for 5 minutes	10
Network Memory Critical	polled every 3 minutes	90%+ for 10 minutes	9



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Critical Network Device Interface Staying Down	SNMP and/or Syslog	Down for 5 minutes	9
Network Device Critical Interface High Utilization	polled every 1 minute	95% for 5 minutes	8
Network CPU Critical	polled every 3 minutes	90%+ for 10 minutes	7
Network Device Critical Interface Flapping	Syslog	Critical Interface Goes Down and Up 3 times in 15 minutes	7
Network Device Hardware Critical	Syslog	1 event	6
Network Critical Interface Error Critical	SNMP polled every 1 minute	Critical Interface showing 5% in or out error rate	6
Device Config Backups Failing	System	failing for 2 consecutive tries	6
Wireless Network: Critical Event Detected	SNMP Polled every 3 minutes or Syslog	1 event	6
Wireless Access Point Disassociated	Syslog	1 event	6
Device Specific Monitors:			
Aruba Wireless Access Point Disassociated	Syslog	1 event	7
Meraki API Access Point Not Responding	API	Alarm Condition exists for 10 minutes	6

2.2.1 REFER TO THE SERVICE DELIVERY SECTION FOR DESCRIPTION OF SEVERITY LEVELS AND MAPPING TO OPERATIONS CENTER PRIORITY LEVELS. (EX. SEVERITY 10 IS OUR HIGHEST SEVERITY AND MAPS TO OUR PRIORITY 1 SERVICE LEVEL.)

2.3 REPORTING

For all Managed Network Services, the following reports are available provided quarterly.



- Hardware availability
- Device performance and capacity
- Trouble tickets
- Change tickets
- Monthly overview reports
- SLA reports

2.4 MANAGEMENT TOOLS

InterVision utilizes a variety of 3rd party software products to provide services. These tools include IT Service Managed (ITSM), monitoring, log collection, remote access, and other support and diagnostic tools. InterVision is responsible for selection and maintenance of software and tools used to provide service. InterVision uses prevailing industry practices to select, deploy, and operate these tools making all reasonable efforts to do in a secure manner and to not introduce any undue risks.

InterVision constantly evaluates the market for best-in-breed services to provide our customers, and may, at any time, change the software in use. InterVision will be responsible for the installation and maintenance of any InterVision-provided solution. The use of any other non-InterVision provided solutions will be the customer responsibility to manage and monitor.

Requests for a list of InterVision software tools may be obtain via a request through your Client Service Delivery Manager (for clients subscribing to Service management) or via a ticket.

2.5 SUPPORT FOR MERAKI CAMERA DEVICES

Management for Meraki Cameras attached is available for fully supported Meraki environments. Meraki Cameras are not available for support if the rest of the Meraki environment is not under InterVision Managed Services support.

Available alerting includes (dependent on Meraki compatibility):

- Camera offline for X minutes
- Camera unable to sync to cloud storage (if licensed)
- Camera has critical hardware failure

Managed Meraki Camera Responsibility Matrix	Customer / InterVision Professional Services	InterVision Essential Service	InterVision Premium Service
General			
Provide controller and camera information (account, password, location, MAC address,...)	X		
Provide client escalation information	X		



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Provide vendor support contracts	X		
Installation and Configuration			
Predictive site survey to develop camera placement	X		
Development of new office/site cameras	X		
Physical controller install	X		
Physical deployment of cameras	X		
Third party integrations	X		
Implementations and major change project management /coordination	X		
Configure new cameras directly	X		
Configure new cameras via controller (remote)			X
Manage notification profiles		X	X
Monitoring			
Setup monitoring and logging of cameras		X	X
Update monitoring thresholds per client requirements		X	X
Camera standard reports setup			X
Incident and Problem Management			
Incident management		X	X



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Vendor management (Escalations, RMA,...)		X	X
Troubleshoot down camera connectivity		X	X
Troubleshoot configuration issues		X	X
Assist with camera connection issues (does not cover quality of video feed or positioning)		X	X
Root cause analysis of supported incidents			X
Patch Management			
Software updates (bi-annual)			X
Critical Security patching (as required)			X
Change Management			
Controllers' software settings		X	X
Log and store changes information via config backup (dependent upon controller tools capability)		X	X
Hardware device physical replacement	X		X
Hardware replacement configuration migration to new device (if compatible)		X	X
Configure camera policies via controller			X
Lifecycle and Capacity Planning			

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Life cycle management notification (bi-annual)			X
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2.6 DEFINITIONS

Dispatch - This refers to the scheduling of remote hands service at your site to assist with device replacements and other issues requiring skilled remote hands to resolve issues.

EOL - End of Life

EOS - End of Support

Essential Service Level - This is an InterVision Managed Service support level that offer monitoring, incident response and issue remediation.

Hosted Cafe' - Hosted Cafe is a name for the InterVision managed services organization and team. It is used to differentiate the services from other services such as InterVision professional services or Customer IT operations.

Monitor only- InterVision will place the Customer premise equipment ("CPE") under support and monitoring only service. The Service covers the specific IT infrastructure devices as detailed in an applicable Service Order. There is no phone support or onsite support with this service.

RMA - Return Merchandise Authorization. This refers to like-for-like device replacement under vendor warranty.

Premium Service Level - This is an InterVision Managed Service support level that offer monitoring, incident response, issue remediation, change management and additional life-cycle management capabilities.

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